

March 09, 2018



U.S. Department
of Transportation

East Building, PHH-30
1200 New Jersey Avenue S.E.
Washington, D.C. 20590

**Pipeline and Hazardous
Materials Safety Administration**

DOT-SP 16598
(FIFTH REVISION)

EXPIRATION DATE: 2022-01-31

(FOR RENEWAL, SEE 49 CFR § 107.109)

1. GRANTEE: Spaceflight, Inc.
Seattle, WA
2. PURPOSE AND LIMITATION:
 - a. This special permit authorizes the transportation in commerce of one low production lithium ion battery pack contained in equipment (SHERPA satellite) that is not of a type proven to meet the criteria in Part III, sub-section 38.3 of the UN Manual of Tests and Criteria and that is not packaged in a UN performance packaging. This special permit provides no relief from the Hazardous Materials Regulations (HMR) other than as specifically stated herein. The most recent revision supersedes all previous revisions.
 - b. The safety analyses performed in the development of this special permit only considered the hazards and risks associated with the transportation in commerce.
 - c. No party status will be granted to this special permit.
3. REGULATORY SYSTEM AFFECTED: 49 CFR Parts 106, 107 and 171-180.
4. REGULATIONS FROM WHICH EXEMPTED: 49 CFR § 173.185(e)(1) and (2) in that packaging must be UN performance packaging, except as specified herein.

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5. BASIS: This special permit is based on the modification application of Spaceflight, Inc. dated December 28, 2017 submitted in accordance with § 107.105 and the public proceeding thereon and additional information dated January 29, 2018.
6. HAZARDOUS MATERIALS (49 CFR 172.101):

| Hazardous Materials Description | | | |
|---|---------------------------|-----------------------|---------------|
| Proper Shipping Name | Hazard Class/ Division | Identification Number | Packing Group |
| Lithium ion batteries, contained in equipment | 9 | UN3481 | N/A |

7. SAFETY CONTROL MEASURES:

a. OPERATIONAL CONTROLS -

(1) Only one low production battery pack (Corvus-BC3 Satellite Battery Pack) contained in equipment (SHERPA satellite) and comprised of not more than four Panasonic 18650 cells (as identified in Spaceflight, Inc.'s application for special permit dated December 28, 2017 for modification and on file with the Office of Hazardous Materials Safety Approvals and Permits Division (OHMSAPD)) may be offered for transportation under the terms of this special permit.

(2) The battery pack must be installed with internal protection to prevent short-circuiting.

(3) A battery kill switch must be installed in each piece of equipment to be able to cut off the current between the battery pack and the satellite during transportation.

(4) The battery pack must be equipped with a Battery Management Controller, which limits the maximum charge current and the maximum voltage.

(5) Cells must be equipped with burst discs for control of venting risk.

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(6) Other hazardous materials contained in the equipment must comply with all requirements in the HMR.

b. TESTING - Corvus-BC3 Satellite Battery Pack: Cells and the battery pack must be of a type proven to have passed T.1 through T.8 except for T.6 and T.8 tests as described in the application submitted on June 14, 2016 on file with OHMSAPD. However, cells must have successfully passed the T.6 and T.8 tests in accordance with the UN Manual of Tests and Criteria, Fifth Revised Edition.

c. PACKAGING -

(1) Cells and the battery pack must be protected against short-circuiting;

(2) The battery pack contained in equipment (i.e., the satellites within the SHERPA satellite) must be wrapped in an anti-static bag meeting the military specification (MIL-PRF-81705);

(3) The satellite containing the battery pack must be placed in an Explore Case (Model Number 7641) as specified in Spaceflight, Inc.'s additional information dated January 29, 2018; and

(4) The net weight of the battery pack in a package may not exceed 200 grams.

8. Marking Requirements: Each package, and overpack if used, prepared under the provisions of this special permit must be plainly marked with the special permit number: DOT-SP 16598.

9. SPECIAL PROVISIONS:

a. Under the terms of this special permit, the grantee may only offer hazardous materials (i.e., the grantee is not authorized as a carrier).

b. A person who is not a holder of this special permit who receives a package covered by this special permit may reoffer it for transportation provided no modification or change is made to the package and it is reoffered for transportation in conformance with this special permit and the HMR.

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c. A current copy of this special permit must be maintained at each facility where the package is offered or reoffered for transportation.

10. MODES OF TRANSPORTATION AUTHORIZED: Motor vehicle and cargo-only aircraft.
11. MODAL REQUIREMENTS: A current copy of this special permit must be carried aboard each aircraft used to transport packages covered by this special permit. The shipper must furnish a copy of this special permit to the air carrier before or at the time the shipment is tendered.
12. COMPLIANCE: Failure by a person to comply with any of the following may result in suspension or revocation of this special permit and penalties prescribed by the Federal hazardous materials transportation law, 49 U.S.C. 5101 et seq:
 - o All terms and conditions prescribed in this special permit and the Hazardous Materials Regulations, 49 CFR Parts 171-180.
 - o Persons operating under the terms of this special permit must comply with the security plan requirement in Subpart I of Part 172 of the HMR, when applicable.
 - o Registration required by § 107.601 et seq., when applicable.

Each "Hazmat employee", as defined in § 171.8, who performs a function subject to this special permit must receive training on the requirements and conditions of this special permit in addition to the training required by §§ 172.700 through 172.704.

No person may use or apply this special permit, including display of its number, when this special permit has expired or is otherwise no longer in effect.

Under Title VII of the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU)—"The Hazardous Materials Safety and Security Reauthorization Act of 2005" (Pub. L. 109-59), 119 Stat. 1144 (August 10, 2005), amended the Federal hazardous

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materials transportation law by changing the term "exemption" to "special permit" and authorizes a special permit to be granted up to two years for new special permits and up to four years for renewals.

13. REPORTING REQUIREMENTS: Shipments or operations conducted under this special permit are subject to the Hazardous Materials Incident Reporting requirements specified in 49 CFR §§ 171.15 Immediate notice of certain hazardous materials incidents, and 171.16 Detailed hazardous materials incident reports. In addition, the grantee(s) of this special permit must notify the Associate Administrator for Hazardous Materials Safety, in writing, of any incident involving a package, shipment or operation conducted under terms of this special permit.

Issued in Washington, D.C.:



for William Schoonover
Associate Administrator for Hazardous Materials Safety

Address all inquiries to: Associate Administrator for Hazardous Materials Safety, Pipeline and Hazardous Material Safety Administration, U.S. Department of Transportation, East Building PHH-30, 1200 New Jersey Avenue, Southeast, Washington, D.C. 20590.

Copies of this special permit may be obtained by accessing the Hazardous Materials Safety Homepage at http://hazmat.dot.gov/sp_app/special_permits/spec_perm_index.htm. Photo reproductions and legible reductions of this special permit are permitted. Any alteration of this special permit is prohibited.

PO: Steve H